PHOTOGRAPHIC INTERPRETATION REPORT

SUSPECT AMM PHASED-ARRAY RADAR, NARO-FOMINSK (MOSCOW AREA), USSR

NPIC/R-218/64

April 1964

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

PREFACE

25X1D

Photography of [redacted] revealed a suspect AMM phased-array radar under construction in the Moscow area. This report presents complete photographic and mensural analysis from photography available through [redacted] 25X1D
The mensural analysis is based on preliminary ephemeral data from KEYHOLE photography of [redacted] 25X1D

25X1D

[redacted] therefore, readers are cautioned that the mensural data may be revised when final ephemeral data are received.

NPIC/R-218/64

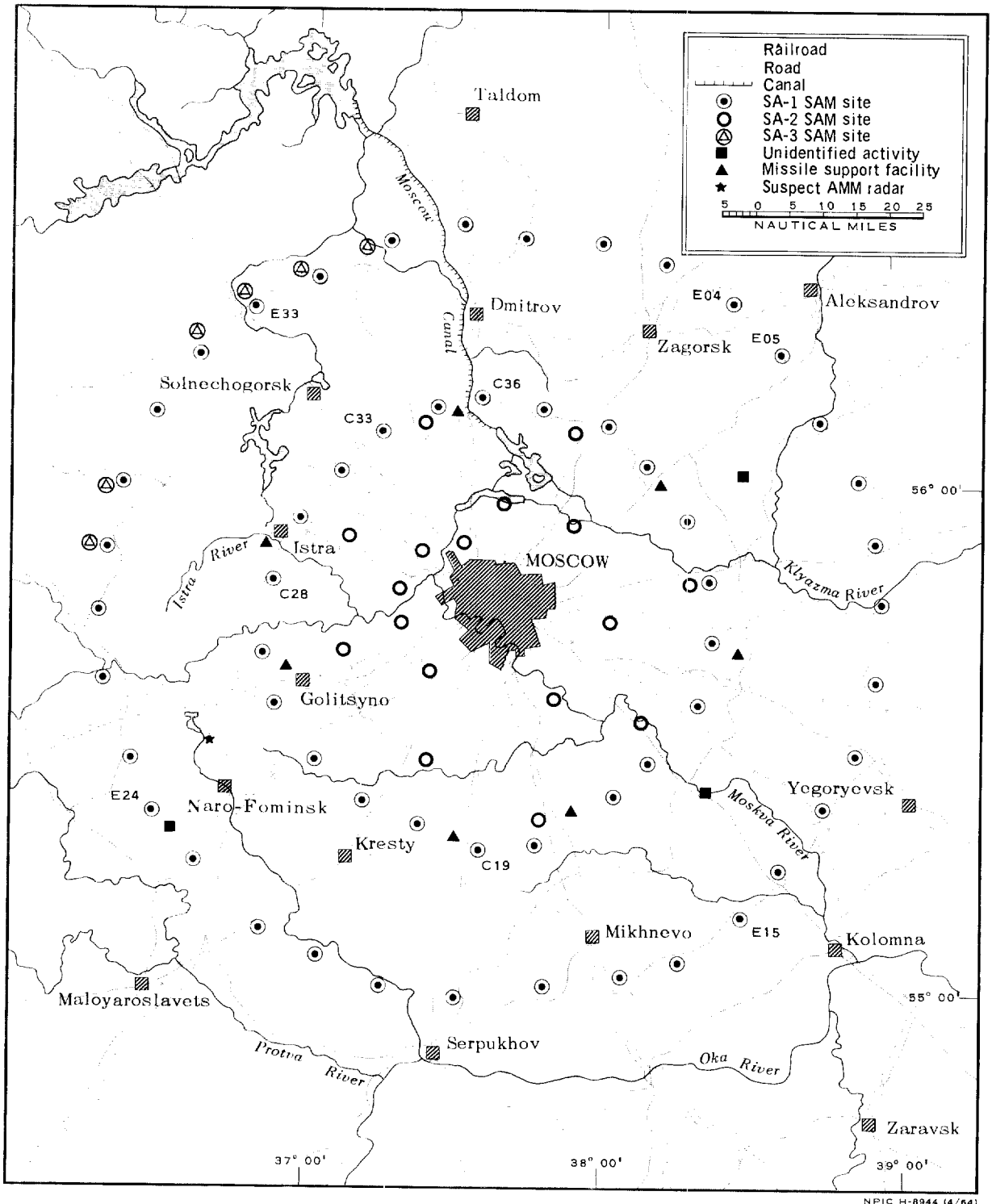
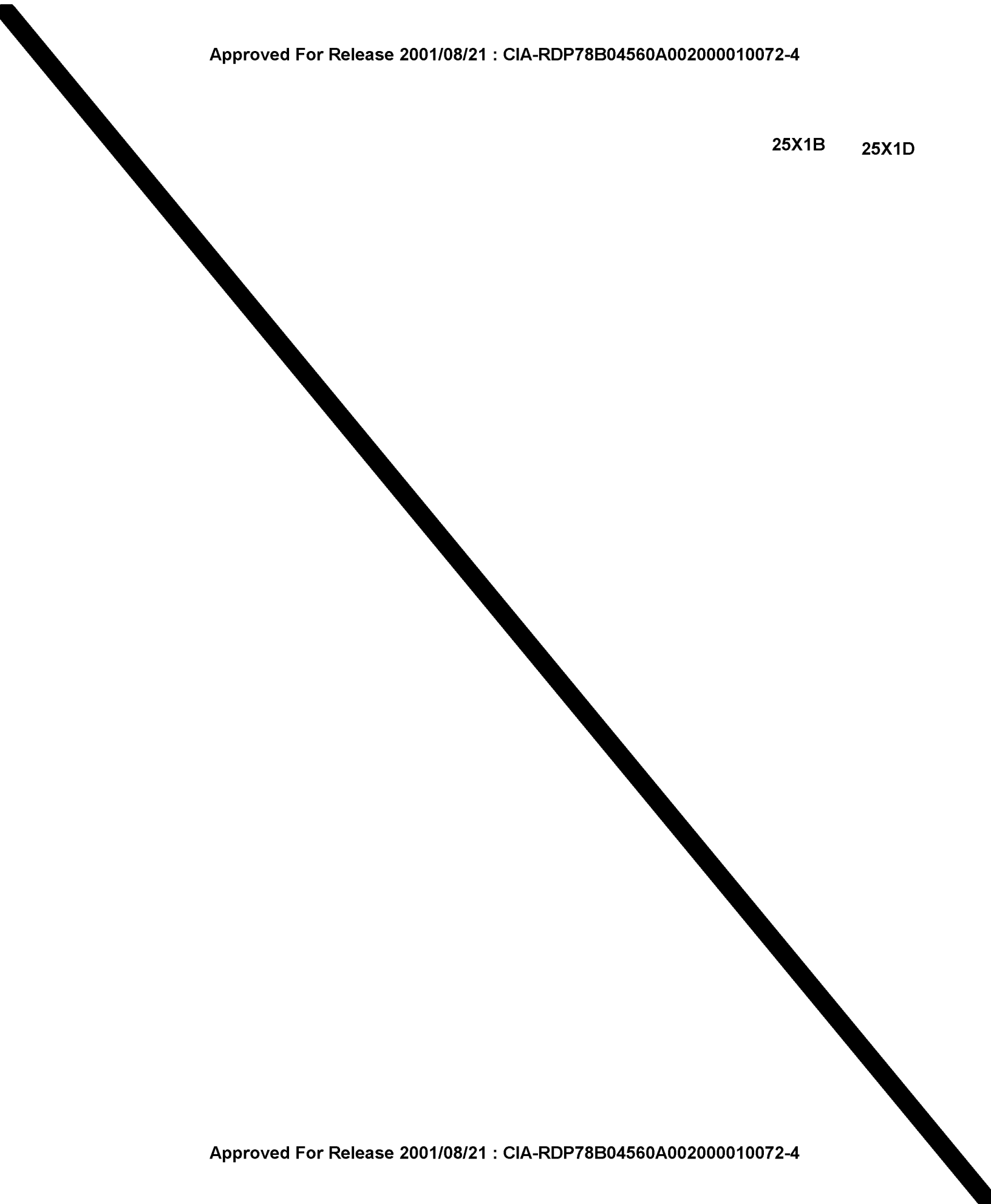


FIGURE 1. LOCATION OF SUSPECT AMM RADAR.

25X1B 25X1D



NPIC/R-218/64

INTRODUCTION

A suspect AMM phased-array radar is under construction at 55-29-50N 36-41-10E, 7 nautical miles (nm) north-northwest of Naro-Fominsk and 35.7 nm west-southwest of Moscow (Figure 1). The suspect radar is situated in a fenced T-shaped clearing of approximately 1,300,000 square feet on a hill about 655 feet above mean sea level.

The installation has two operational areas, one with the suspect radar and possible control building and the other with a suspect control building under construction. Two support areas, one of which contains a rail transshipment point, service the operational areas (Figure 3). This report describes the components and provides construction chronology through [redacted] 25X1D

INSTALLATION COMPONENTS

OPERATIONAL AREA A

The suspect phased-array radar under construction is an inverted V-shaped structure that measures 320 feet in height, 390 feet across the base, and tapers to 95 feet at the top (Figure 4). On the top is a possible ramp 210 feet long by 20 feet wide and rising approximately 10 feet to its highest point. The structure has sides that appear to be 65 feet thick. Probable construction scaffolding was observed at both ends of the structure; however, the possibility that these provide structural support cannot be overlooked. The structure has two faces, each 325 feet wide with a slant height of 350 feet set at an angle of slope [redacted] 25X1D from vertical. Based on these figures, each face has a surface area of 113,750 square feet. The perpendicular orientation of the structure is [redacted] 25X1D degrees, and the longitudinal orientation is [redacted] 25X1D degrees, generally in the direction of the center of Moscow.

The north-northwest face is composed of six horizontal stacked sections, each approximately 50 feet high, that give the face a jalousied or louvered appearance. On photography of [redacted] 25X1D the horizontal sections are light colored. Shadows along the edges of the face appear serrated in a generally circular pattern, approximately 275 feet in diameter, similar to the shadows of antenna element panels at the AN/FPS-85 (Figure 2). The south-southeast face is composed of a stack of three horizontal sections, each 100 feet high and dark colored. It may be significant that the north-northwest face is light reflective even though in shadow, while the south-southeast face appears dark toned though in direct sunlight. Assuming that both faces are intended to support antenna elements and that all, or nearly all, the antenna element panels are emplaced, the face probably would reflect light as the north-northwest face does.

A possible control building (Figure 5, item 1) 520 by 185 feet and 50 feet high is approximately 120 feet west-southwest of the suspect radar. This flat-roofed building has equally spaced dark lines extending across the roof. Earlier photography of the building showed it as apparently having four compartments or bays, each approximately 185 by 130 feet. At the northwest corner of the building is an annex 110 by 75 feet; and on the southwest side of the building are three probable entrances, one of which appears large enough for vehicle entry. The longitudinal orientation of the possible control building is the same as that of the suspect radar, [redacted] 25X1D degrees, with the south-southeast wall of the control building in line with the base of the south-southeast face.

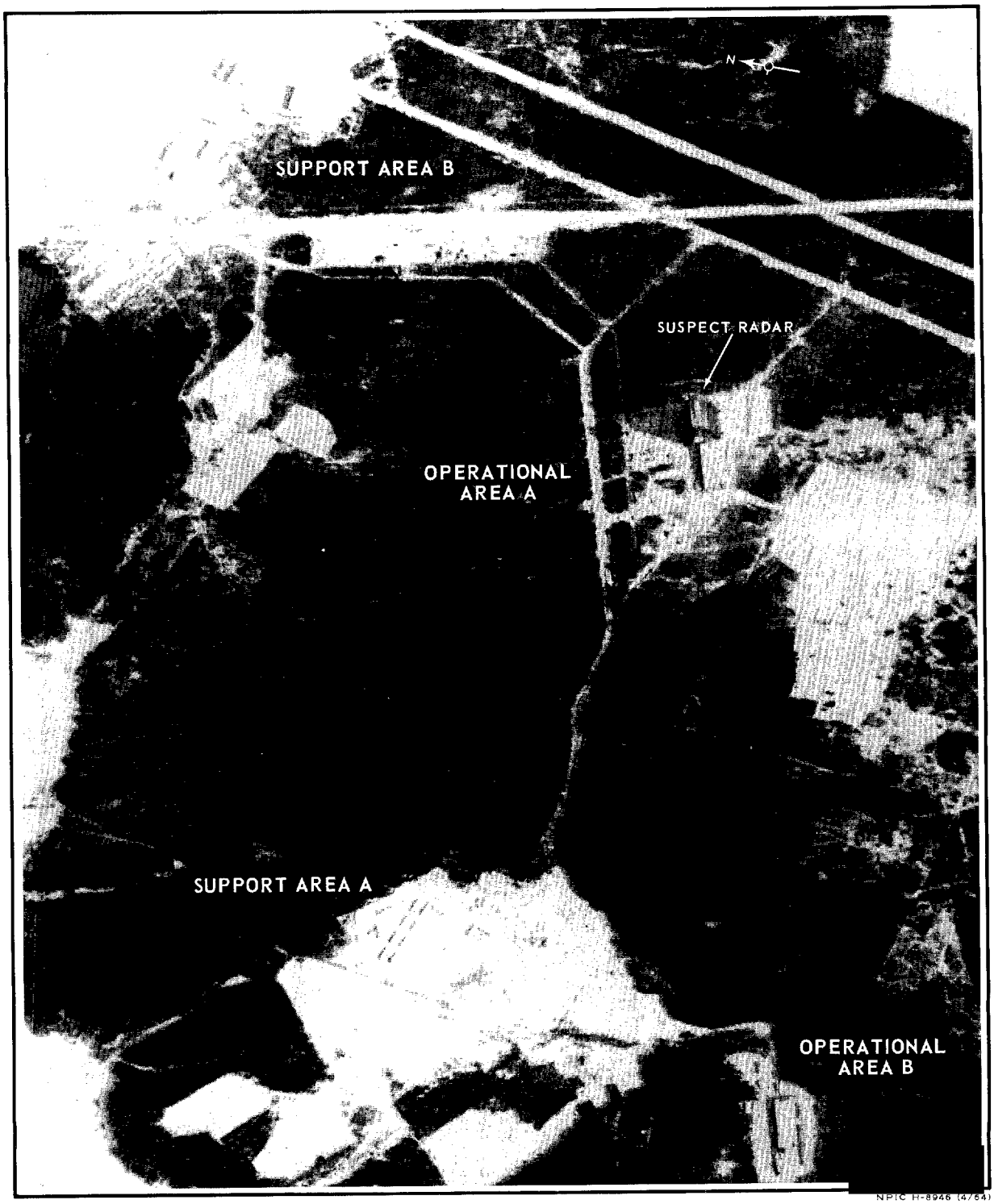


FIGURE 3. SUSPECT AMM PHASED-ARRAY RADAR INSTALLATION.

25X1D

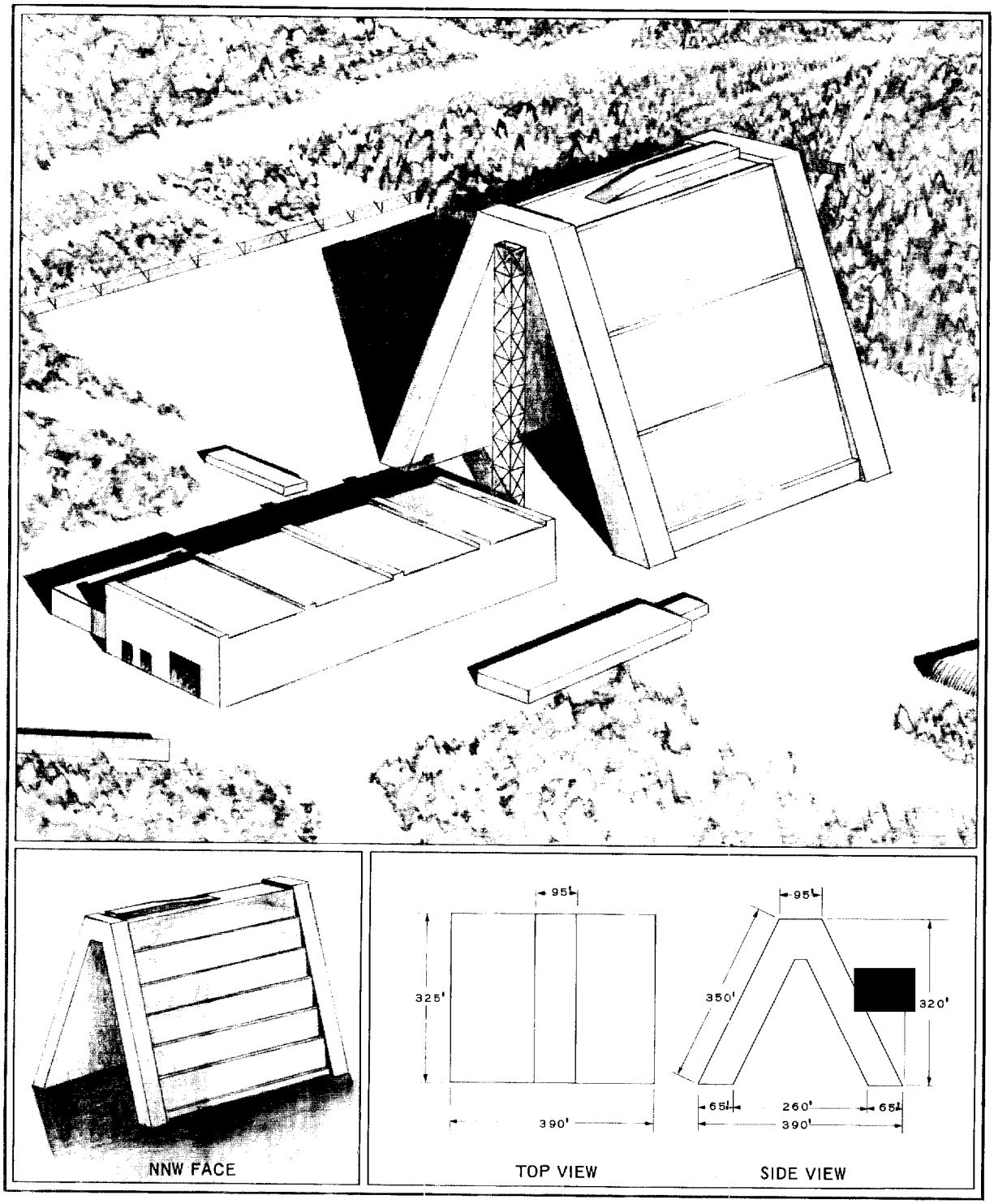
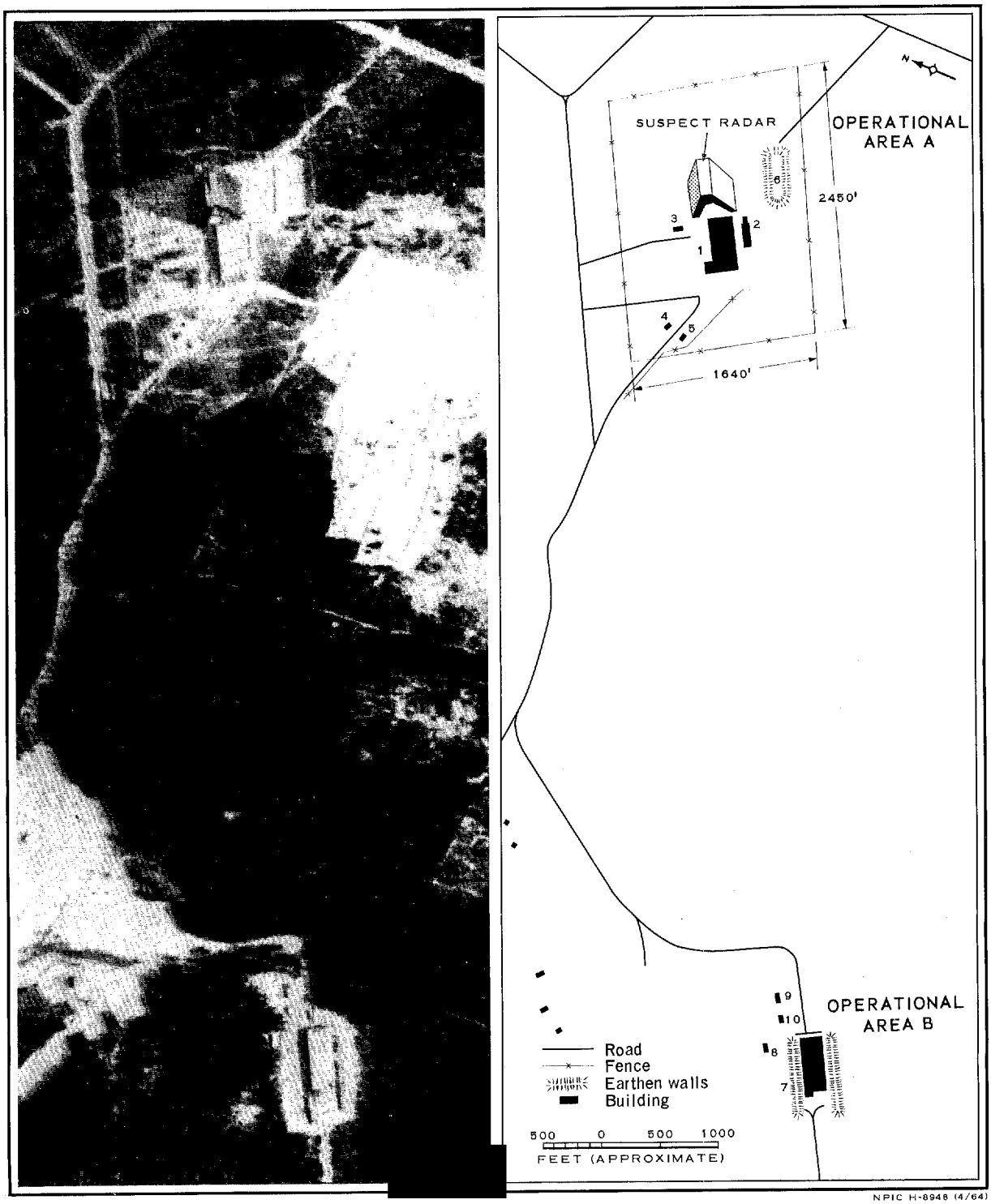


FIGURE 4. SUSPECT PHASED-ARRAY RADAR.

25X1D



25X1D

FIGURE 5. OPERATIONAL AREAS A AND B.

Parallel to the possible control building, on the south side, is a flat-roofed building 240 by 45 feet and 10 feet high (Figure 5, item 2). On its east side is an extension that measures 65 by 20 feet. Another flat-roofed support building is at a right angle to the northeast corner of the possible control building and measures 80 by 25 feet and 10 feet high (item 3). There are two buildings along the west edge of the fence that are approximately 100 by 40 feet each (items 4 and 5).

The cleared area in front of the north-northwest face measures approximately 625 by 605 feet. In this clearing are numerous pieces of equipment or construction material. The clearing before the south-southeast face is 625 by 540 feet. At the extreme south edge of the cleared area is a low earthen wall that is generally parallel to the south-southeast face (item 6).

A review of earlier photography indicates that no construction had begun for the installation in the [redacted] 25X1D (Figure 6) clearing was observed for the operational area. [redacted] construction of the 25X1D possible control building had probably begun, and site clearing and fencing appeared complete. In [redacted] construction was 25X1D continuing on the control building, and footings for the suspect phased-array radar were noted. On [redacted] photography, the walls of the suspect radar appeared in initial stages of construction and began to indicate height (Figure 7). By [redacted] 25X1D the main buildings in Operational Area A appeared as shown in Figures 3-5.

OPERATIONAL AREA B

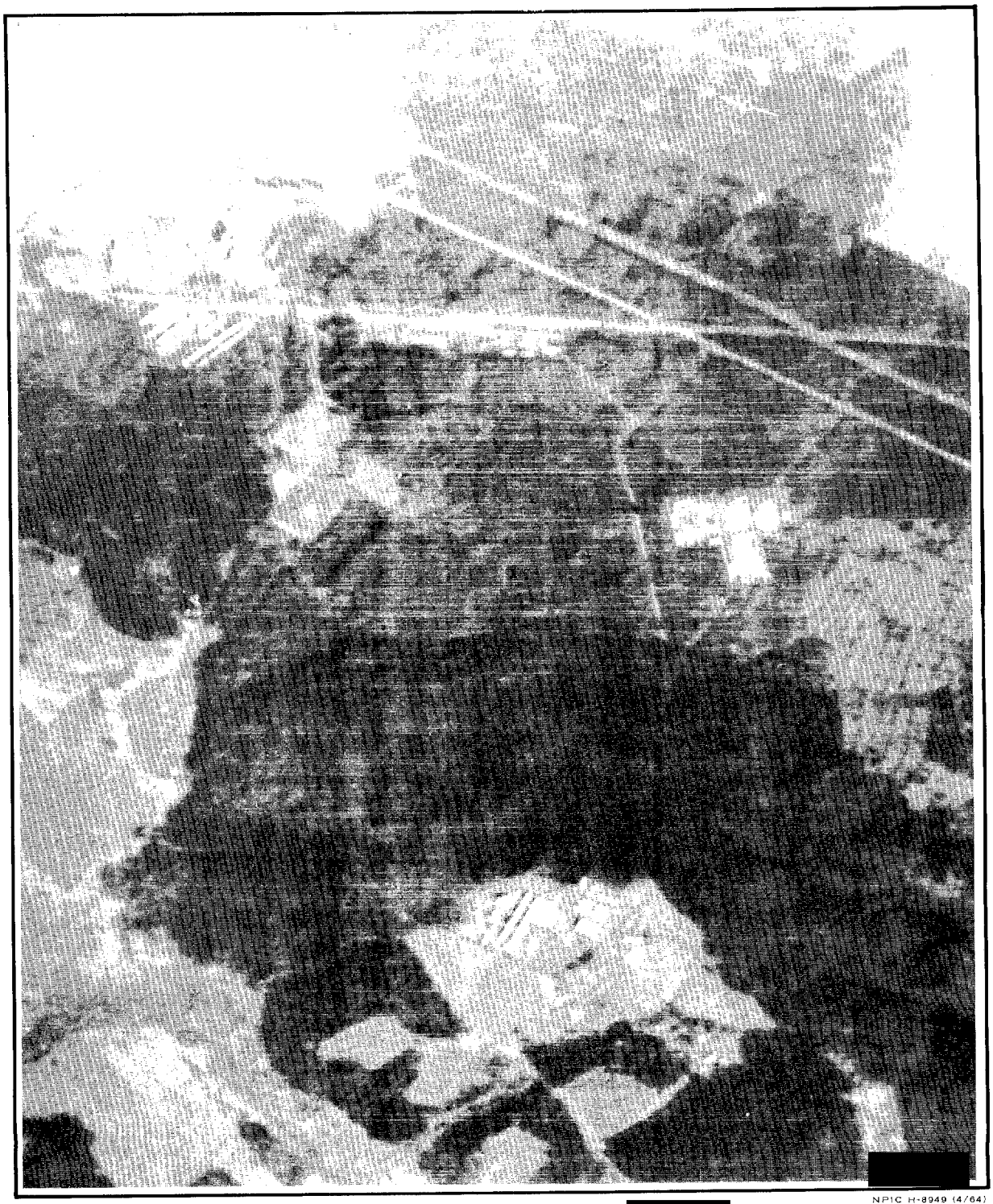
A suspect control building, 540 by 195 feet and 45 feet high (Figure 5, item 7) is under construction in a cleared area 7,500 feet west-southwest of Operational Area A. On unrectified photography, the building appears to be offset slightly to the south of an imaginary line extending from the aligned south-southeast sides of the suspect radar and possible control building in Operational Area A. The longitudinal orientation of the building is the same as that of the 25X1D suspect radar, [redacted] degrees. Parallel to the long axis of the building on both sides there appear to be low earthen walls. A road servicing the southwest side of the building apparently is in a shallow cut that enters the building below ground level.

Three other support buildings 125 by 40 feet (item 8), 120 by 50 feet (item 9), and 60 by 45 feet (item 10) are located just northeast of the suspect control building.

Construction timing in this area is the same as at Operational Area A -- clearing was first observed in [redacted] and a month later 25X1D the walls of a suspect control building were under construction. On photography of [redacted] 25X1D the walls or footings were apparent for the rectangular shape, but a T-shaped portion of the structure had been put under roof, possibly as a temporary environmental shelter. By [redacted] 25X1D [redacted] this detail was no longer observed, and 25X1D the building had been roofed except for approximately 4,000 square feet at the northwest corner.

SUPPORT AREA A

Support Area A is 5,225 feet northwest of Operational Area A and 4,460 feet north-northeast of Operational Area B, and connected by road to both (Figure 3). On photography of



25X1D

FIGURE 6. SUSPECT RADAR INSTALLATION, [redacted]

25X1D

NPIC/R-218/64

FIGURE 7. SUSPECT RADAR INSTALLATION, [redacted]

25X1D

25X1D [redacted] at least five buildings appear complete and eight others are under 25X1D construction. By [redacted] at least 18 buildings had been constructed, and a month later the area appeared essentially the same as it 25X1D does on photography of [redacted] Dimensions of buildings in the area are given in the following list, which has item numbers keyed to Figure 8.

1, 2. Support buildings 90 by 25 feet
3. Support building 40 by 25 feet
4. T-shaped administration building 125 by 100 by 40 feet
5. Support building 50 by 15 feet
6-15. Barracks-type buildings 125 by 30 by 15 feet high
16. Fenced probable motor pool 225 by 150 feet
17. Barracks-type building 100 by 35 feet
18-22. Barracks-type buildings 130 by 30 by 15 feet high
23, 24. Barracks-type buildings 110 by 25 feet
25, 26. Revetted probable storage buildings 30 by 30 feet
27. Support building 25 by 25 feet
28. Plus-shaped building 75 by 15 feet, 75 by 15 feet
29. Support building 105 by 30 feet
30. Support building 40 by 40 feet
31. Support building 40 by 20 feet

SUPPORT AREA B

North of Operational Area A, a second support area is situated along both sides of the rail line and includes 47 buildings and a transshipment point with a single-track rail 25X1D spur. Reanalysis of [redacted] photography revealed that at least 10 buildings were present and that construction scarring was apparent for other buildings. Construction activity was also evident at the rail transshipment point. On 25X1D photography of [redacted] the support 25X1D area appeared basically complete. Between [redacted] 25X1D [redacted] two barracks-type buildings 220 by 40 feet had been added.

The following list gives dimensions of the buildings and has item numbers keyed to Figure 9.

1, 2. Multistory apartment-type buildings 220 by 40 by 30 feet high
3. Support building 85 by 40 feet
4. Probable multistory apartment-type building 245 by 45 feet
5. Probable multistory apartment-type building 295 by 40 feet
6, 7. Probable multistory apartment-type buildings 260 by 40 feet
8. Multistory apartment-type building 240 by 40 by 30 feet high
9. Probable multistory apartment-type building 180 by 40 feet
10. Barracks-type building 110 by 40 feet
11, 12. Multistory apartment-type buildings 220 by 45 by 30 feet high
13. Barracks-type building 125 by 25 feet
14. Unidentified building, two sections 90 by 75 and 65 by 40 feet
15. Support building 80 by 35 feet
16. Barracks-type building 190 by 40 feet
17-20. Barracks-type buildings 125 by 25 feet
21-26. Multifamily dwellings 40 by 30 feet
27. Support building 100 by 25 feet
28, 29. Multifamily dwellings 30 by 30 feet
30. T-shaped administration building 115 by 70 by 30 feet
31. Barracks-type building 140 by 35 feet
32-40. Barracks-type buildings 120 by 25 feet
41. Barracks-type building 140 by 35 feet

NPIC/R-218/64

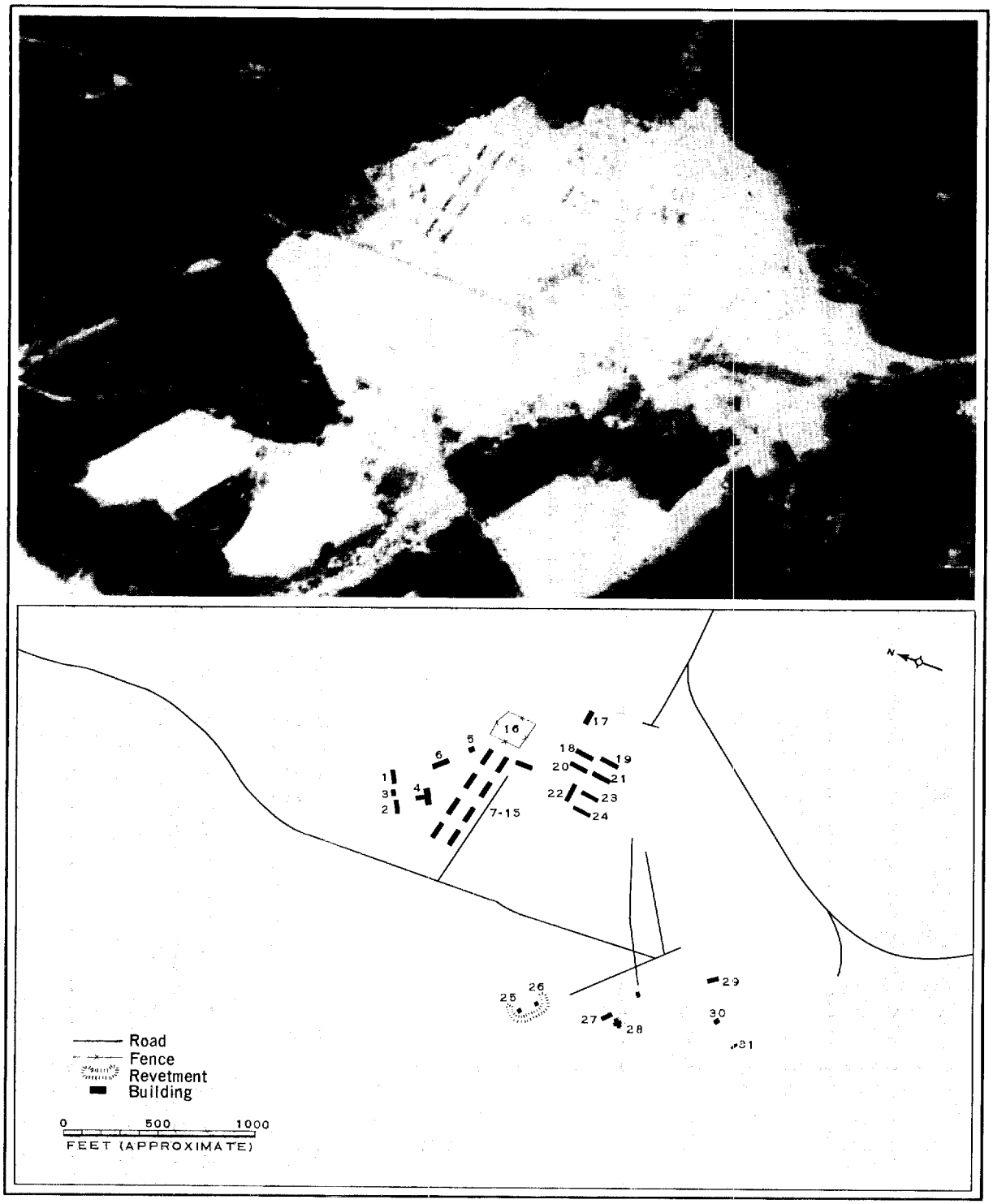
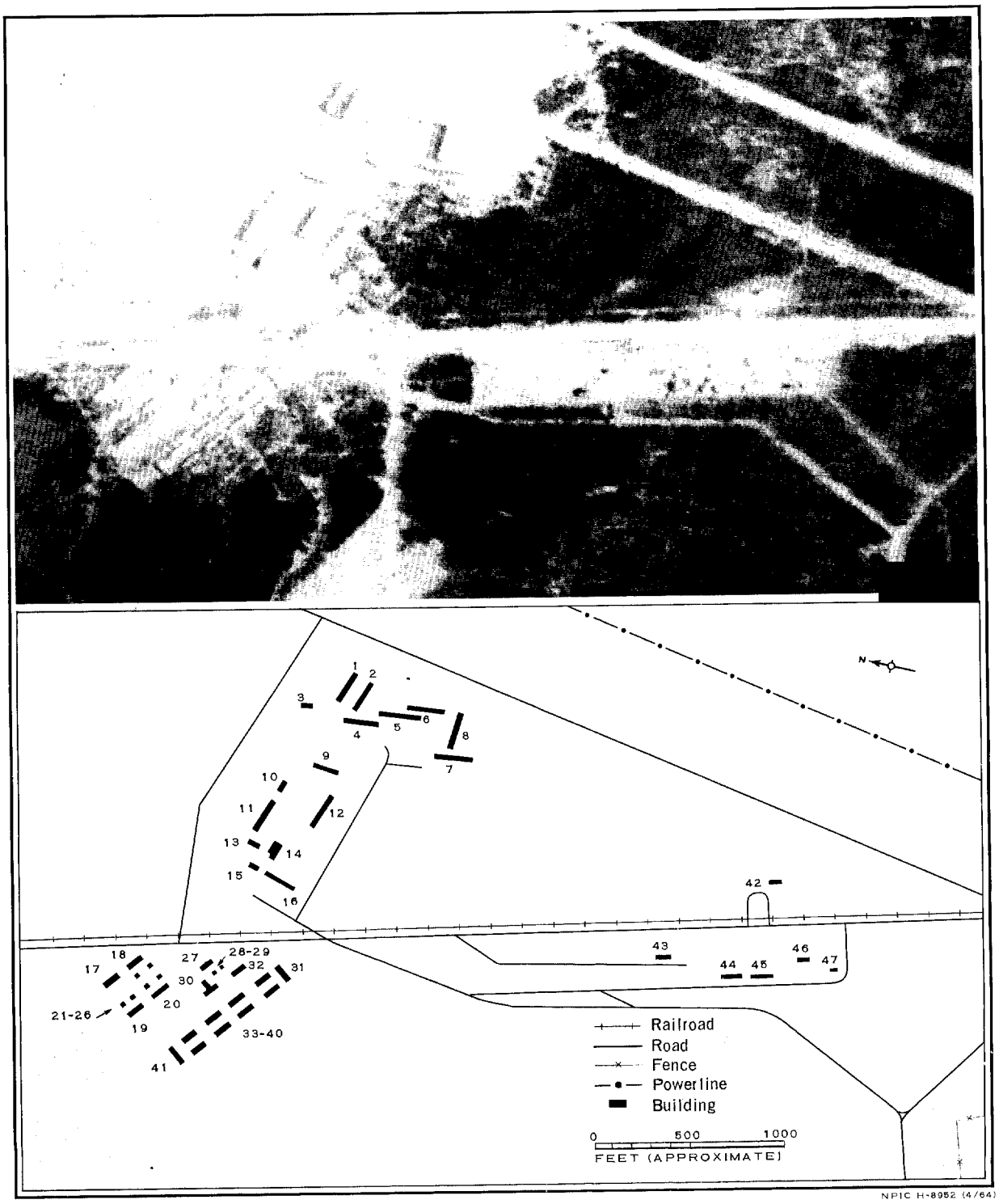


FIGURE 8. SUPPORT AREA A.

25X1D



25X1D

FIGURE 9. SUPPORT AREA B.

NPIC/R-218/64

42. Support building 100 by 30 by 15 feet high
43. Support building 110 by 30 feet
44. Support building 130 by 40 feet
45. Support building 145 by 30 feet
46. Support building 110 by 30 feet
47. Support building 45 by 25 feet

REFERENCES

PHOTOGRAPHY

25X1D [redacted]

MAPS OR CHARTS

DIA. US Air Target Chart, Series 200, Sheet 0167-4HL, 2d ed, Mar 63, scale 1:200,000 (SECRET)

DOCUMENTS

1. "Earth-Based Electronics," *Electronics*, 17 Nov 61, p. 108 (UNCLASSIFIED)

2. Maguire, Thomas. "Automatic Spacetracking Era Begins," *Electronics*, 14 Feb 64, p. 24 (UNCLASSIFIED)

25X1C 3. CIA. PIC/JR 1010/61, *Antimissile Complex, Sary Shagan, USSR*, Apr 61, (SECRET/Noforn [redacted] -Downgrading Prohibited) 25X1C

4. NPIC. R/147/63, *Possible Antimissile Missile Associated Facilities, Moscow Area, USSR*, Jul 63 (TOP SECRET CHESS RUFF)

5. NPIC. R/103/64, *Possible Antimissile Missile Associated Facilities, Moscow Area, USSR*, Feb 64 (TOP SECRET CHESS RUFF)

REQUIREMENTS

CIA. C-DI4-81,104 (partial answer)

CIA. C-RR4-81,129

NPIC PROJECTS

N-231/64 (partial answer)

N-274/64

Approved For Release 2001/08/21 : CIA-RDP78B04560A002000010072-4
TOP SECRET

TOP SECRET

Copy 106

16 Pages

[redacted]

NPIC/R-218/64

April 1964

PHOTOGRAPHIC INTERPRETATION REPORT

SUSPECT AMM PHASED-ARRAY RADAR, NARO-FOMINSK (MOSCOW AREA), USSR

CIA

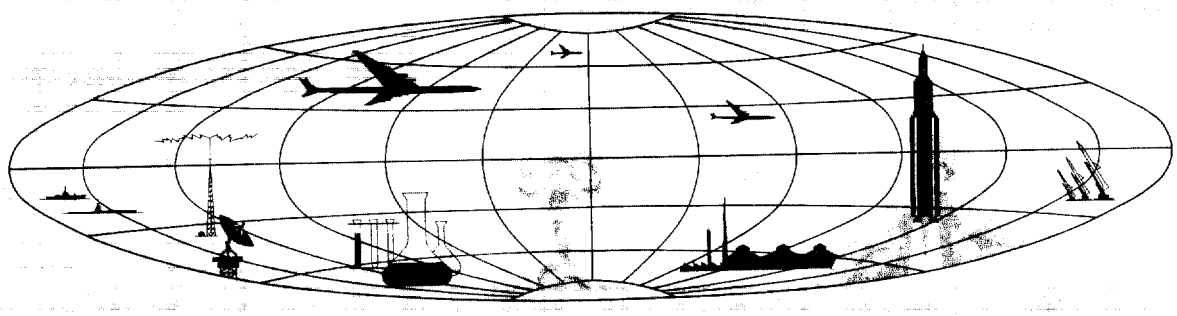
DIA

Handle Via TALENT-KEYHOLE Control Only

WARNING

This document contains classified information affecting the national security of the United States within the meaning of the espionage laws U. S. Code Title 18, Sections 793 and 794. The law prohibits its transmission or the revelation of its contents in any manner to an unauthorized person, as well as its use in any manner prejudicial to the safety or interest of the United States or for the benefit of any foreign government to the detriment of the United States. It is to be seen only by personnel especially indoctrinated and authorized to receive TALENT-KEYHOLE information. Its security must be maintained in accordance with KEYHOLE and TALENT regulations.

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



TOP SECRET